

*Reply to Office Action of April 3, 2006*

**REMARKS**

Upon entry of the instant amendment, claims 1-32 remain pending in the present application. In the instant amendment, claims 16, 20, 23 and 26 have been amended. New claims 29-32 have been added.

The instant amendments made herein to the claims do not incorporate new matter into the application as originally filed. For example, claims 16 and 20 have been amended into an independent form by incorporating all limitations of claim 1. Claims 23 and 26 have been amended so as to solely depend from claim 20. Further, new claims 29-32 are based on claims 23-26, respectively, but solely depend from claim 16.

Proper consideration of each of the pending claims (i.e., claims 1-32) is respectfully requested at present, as is entry of the present amendment, and allowance of each of the instantly pending claims 1-32.

***37 CFR § 1.132 Declarations***

Enclosed with the instant reply are two separate 37 CFR § 1.132 declarations (i.e., “*Declaration I*” and “*Declaration IP*”) of Mr. Akira Mitsui, one of the present inventors. The Examiner is respectfully requested to fully review and consider each of the attached declarations of Mr. Akira Mitsui as they are submitted to be material to a consideration of the patentability of the instant invention being claimed. More particular comments relating to the two declarations are set forth herein, when responding to the outstanding rejections of the pending claims.

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***Allowable Subject Matter***

At page 6 of the Office Action, the Examiner indicates that claims 20-22 have been objected to as being dependant upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

In the present amendment, claim 20 has been amended to be in an independent form by incorporating the limitations of claim 1 therein. Further, claims 23 and 26 have been amended to depend from only claim 20, and subsequently claim 21-26 now depend solely from patentable claim 20.

Therefore, it is submitted that the objection to claim 20-22 has been overcome and/or rendered moot, with the result being that each of independent claim 20 and dependent claims 21-26 are now in condition for allowance.

***Claim Rejections - 35 USC § 102(b) and 35 USC § 103(a)***

At page 2, line 16 to page 3, line 14 of the Office Action, claims 1-15 (product claims) have been rejected under 35 USC § 102(b) as being anticipated by, or under 35 USC § 103(a) as being obvious over Braat US '327 (US 6,211,327) or WO '273 (WO 00/46273).

At page 3, lines 15 to page 5, line 5 of the Office Action, claims 16-19 and 23-26 (process claims) have been rejected under 35 USC § 103(a) as being unpatentable over Dalton US'164 (US 4,463,164).

Further, at page 5, lines 6-20 of the Office Action, claims 1-15 (product claims) have been rejected under 35 USC § 102(b) as being anticipated by, or under 35 USC § 103(a) as being obvious over Dalton US'164.

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Further, at page 6, lines 1-8 of the Office Action, claims 27-28 (*product-by-process claims*) have been rejected under 35 USC § 102(b) as being anticipated by, or under 35 USC § 103(a) as being obvious over Dalton US'164 or WO '273.

Reconsideration and withdraw of each of these rejections is respectfully requested based upon the following considerations.

Legal Standard for Determining Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsisimilis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Legal Standard for Determining Prima Facie Obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the

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knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obviousness was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or

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motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The Present Invention and Its Advantages

The present invention (*see claim 1*) is directed to polyphenylene ether (PPE) having a relatively low molecular weight and a narrow (sharp) molecular weight distribution. More specifically, the polyphenylene ether has a specific reduced viscosity (a reduced viscosity ( $\eta_{sp}/c$ ), as measured at 30°C in a 0.5g/dl chloroform solution, of 0.04-0.18 dl/g) and a specific molecular weight distribution (a molecular weight distribution of 1.5-2.5).

The low molecular weight PPE of the present invention has high thermal resistance, excellent electric properties and solubility to various solvents or reagents, and has a good ability for mixing or reacting with other components.

Further, the present invention (*see claims 16 and 20*) is also directed to a process for producing the low molecular weight PPE efficiently by selectively precipitating the low molecular weight PPE.

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Further, the present invention (see claims 27 and 28) is also directed to a low molecular weight PPE obtained by recited processes, and are thus product-by-process claims.

Distinctions of Product Claims (claims 1–15) over Braat US '327 and WO '273

At page 3, lines 9-14 of the office action, the Examiner states as follows:

*"the composition disclosed by the reference is prepared from reactants and under process conditions that are inclusive of the claimed reactants and conditions. In view of this similarity, it would appear to be inherent that the product, low MW PPE having the claimed MW distribution, the claimed mean particle size and the claimed equation represent the glass transition temperature, could be prepared following the teaching of the reference."*

However, it is submitted that Braat US '327 fails to teach or disclose "a molecular weight distribution of 1.5-2.5". Further, any composition obtained by the references relied on by the examiner (Braat US '327, Dalton US'164 or WO '273) does **not** have the features recited in the pending claims. Namely, they show one or both of (i) a different MW distribution and (ii) a different viscosity from those of the present invention.<sup>1</sup>

Specifically, PPE obtained according to Braat US '327 (and WO '273) has a broader MW distribution than that associated with the instantly claimed invention.

In support of the above contention, the Examiner's attention is directed to the 37 CFR § 1.132 Declaration of Mr. Akira Mitsui (hereinafter referred to as "**Declaration F**"), which is enclosed with the instant reply. The Examiner is respectfully requested to review **Declaration I**

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<sup>1</sup> This was fully described in the prior reply February 28, 2006 (e.g., see pages 15-21, and Exhibit Figure 1 enclosed with the prior reply).

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at this time, as it is submitted to be material to a consideration of the patentability of the present invention over the cited art of record.

As shown in the **Declaration I**, the low molecular weight PPE of the present invention is distinguished from PPE obtained in the cited references being applied by the USPTO. Specifically, in Comparative Example 5 as described at page 27 of the instant specification, PPE was obtained according to the method of Braat US'327 (*see page 27, lines 9-10 of the instant specification*). PPE obtained according to Braat US'327 has a molecular weight distribution of 2.68 (*see Table 1 at page 30 of the instant specification*), while the molecular weight distribution of the present invention is 1.5-2.5. That is, the molecular weight distribution of the present invention is narrower (i.e., *sharper*) than that of Braat US'327. The relationship between the present invention, Braat US'327 and Dalton US '164 (*which is discussed below*) was shown in Exhibit Figure 1 of the prior reply of February 28, 2006, and in identical Exhibit Figure 1 of the enclosed **Declaration I**.

Regarding Comparative Example 5 of the instant specification, Applicants submit that Comparative Example 5 of the present application properly represents the PPE of Braat US'327. In support of this contention, the Examiner's attention is again directed to the enclosed **Declaration I**.

As shown in Table 2 of the Declaration I, the conditions of Comparative Example 5 of present application are identical to those of Braat US '327 in their important points.

Therefore, it is submitted that the obtained PPE in Comparative Example 5 is substantially identical to PPE obtained by the manner of Braat US'327.

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Accordingly, Applicants' argument that PPE of Braat US'327 has a molecular weight distribution of 2.68 is well proven and supported in the attached **Declaration I**.

To reach a proper determination under 35 U.S.C. 103(a), the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. (*See MPEP § 2142.*)

The temperature at the time of precipitating PPE affects the polymerization, as is shown in the Examples in the instant specification (i.e., *see Examples 9 and 10, and Comparative Example 6*). That is, in order to obtain a low MW PPE in a high yield utilizing the instantly claimed method that contains therein a "solution method" step, the temperature at the time of the subsequent precipitation of PPE is significant. (*See instant claims 16 and 27.*)

There is no disclosure in the cited art of record, which concerns and/or relates to the temperature at the time of precipitating PPE. It should be noted that the cited Braat US '327 reference only discloses the temperature at the polymerization and not at the time of precipitation. In the polymerization progress of PPE, polymerization usually is carried out at a



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temperature of around 40°C, and the process after polymerization (*i.e.*, Steps 2 – 4), is also carried out under a temperature that is the same as with polymerization. Thus, Braat US '327 fails to give any consideration to the temperature at the precipitation.

As explained above, Braat US '327 not only fails to teach or describe the method of the instant invention, but also actually teaches away from the method of the present invention.

Therefore, any assertion that the present invention is obvious from Braat US '327 is clearly based upon an improper application of hindsight reconstruction, which improperly relies on and requires as its supporting foundation, Applicants' own teachings and disclosure in the instant specification (*rather than by anything that the cited reference taken as a whole actually disclose and/or teach*).

Regarding WO '273, the cited reference also fails to disclose and suggest "a reduced viscosity ( $\eta_{sp}/c$ ), as measured at 30°C in a 0.5g/dl chloroform solution, of 0.04-0.18 dl/g, and a molecular weight distribution of 1.5-2.5."

Similar to Braat US '327, WO '273 relates to solution process, and thus the product and the process of the present invention are distinguishable from the cited WO '273 reference.

As explained above regarding Braat US'327, the process of WO'273 is different from the method of the present invention and the PPE of the present invention is also distinguished from the that of cited WO '273 reference.

For example, WO '273 fails to teach and/or suggest any manner to control, especially narrow (sharpen) the molecular weight distribution of an obtained PPE.

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Accordingly, the product of the present invention as recited in instantly pending claims 1-15 is distinguished from and never anticipated by, or rendered obvious by, Braat US '327 and WO '273, whether such references are considered singularly or in combination.

*Distinctions of Process Claims 16-19 and 23-26 over Dalton US '164*

The present invention is directed at a process for producing low molecular weight PPE having a reduced viscosity ( $\eta_{sp}/c$ ), as measured at 30°C in a 0.5g/dl chloroform solution, of 0.04-0.18 dl/g, and a molecular weight distribution of 1.5-2.5. Further, as described above, the process of the present invention has features such as precipitating a low molecular weight PPE by adding a poor solvent for said low molecular weight PPE to said polyphenylene ether solution (see claim 16).

However, PPE having such properties cannot be obtained by the method disclosed in the cited Dalton US '164 reference. Dalton US '164 discloses, as a polymerization solvent, a mixture of a solvent for the PPE and a non-solvent for the PPE. However, Dalton US '164 fails to disclose or suggest obtaining a PPE having a low MW as defined by the present claims. Dalton US '164 fails to give any consideration about the low MW PPE having a MW lower than 24,500, which is converted to  $\eta_{sp}/c$  of 0.3dl/g.

Further, since n-octane, which is non-solvent for PPE having a  $\eta_{sp}/c$  higher than 0.3dl/g, and is a solvent for PPE having a  $\eta_{sp}/c$  lower than 0.3dl/g, is used in Dalton US '164, a PPE having a  $\eta_{sp}/c$  of 0.04-0.18dl/g of the present invention cannot be precipitated according to the process of Dalton US '164. Still further, drawing low MW PPE of the present invention from a

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solution where the PPE is solved in the solution, should be carried out at a low temperature (*see claims 16 and 27*), and this is neither disclosed nor taught in Dalton US '164.

The examiner states, at page 4, lines 3-2 from the bottom of the Office Action, "*the reference does disclose the reaction temperature, of 0°C which is within the range, causing the polymer to precipitate.*"

Importantly (as a point of distinction), polymerization and precipitation of PPE is carried out at the same time in the precipitation method disclosed in Dalton US'164. They cannot, however, be carried out at the same time in the recited method of pending method claim 16 (*or pending product-by-process claim 27*) since it contains "a solution method step" therein.

Further, Dalton US '164 also fails to disclose or suggest the use of alcohols, which cause the precipitation of a specific low MW PPE having "undesirably low" molecular weight or the mixture of such an alcohol. (*See instant method claim 20 and product-by-process claim 28.*)

Therefore, the methods of claims 16 and 20 (and their dependent claims) and those recited in product-by-process claims 27-28 are distinguished from Dalton US'164.

Accordingly, it is submitted that none of instantly pending method claims 16-26 (*or product-by-process claims 27-28*) are in any way anticipated by, or rendered obvious by, the cited Dalton US '164 reference of record.

*Distinctions of Product Claims 1-15 over Dalton US'164*

Dalton US '164 fails to disclose and suggest "a reduced viscosity ( $\eta_{sp}/c$ ), as measured at 30°C in a 0.5g/dl chloroform solution, of 0.04-0.18 dl/g, and a molecular weight distribution of 1.5-2.5."

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The Examiner states that the present invention is inherent in the cited references, at page 5, line 3-1 from the bottom of the Office Action.

However, as explained in the attached **Declaration I** and as described above, PPE disclosed in the cited Dalton US '164 reference does not have the specific characteristics of the instant invention.

Further, as mentioned above, the instantly claimed methods to produce the specific low molecular weight PPE are also distinguished from the method disclosed in Dalton US '164. Further, Dalton US '164 fails to disclose or suggest a process for obtaining a PPE having  $\eta_{sp}/c$  of 0.04-0.18dl/g of the present invention.

Accordingly, claims 1-15 are not anticipated by, or rendered obvious by, the cited Dalton US'164 reference.

*Unexpected Results of the Present Invention*

The relationship between the present invention, Dalton US '164 and Braat US'327 is shown in **Exhibit Figures 1-3 of Declaration I**. Upon review of Exhibit Figures 1-3 of Declaration I, it is clearly realized that the present invention is distinguished from the cited references. Particularly, it is realized that the low molecular weight PPE of the present invention has high thermal resistance, excellent electric properties and solubility to various solvents or reagents, and has a good ability for mixing or reacting with other components, and that these properties are not associated with a PPE encompassed by or taught by the cited art of record.

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As shown in **Exhibit Figures 1-3 of Declaration I**, the low molecular weight PPE of the present invention has a higher Tg and a more suitable dielectric constant, furthermore, solubility to various solvents or reagents, and good ability of mixing or reacting with other components, which are not suggested in the cited references. Further, according to the process of the present invention, such an excellent PPE can be produced productively.

In **Exhibit Figure 1 of Declaration I**, it is clearly shown that the PPE of the present invention has a very distinct viscosity ( $\eta_{sp}/c$ ) and Molecular Weight Distribution (MWD) as compared with compositions of Comparative Example 5 in the specification (which is equivalent to the Braat US '327 reference), Comparative Examples 1 and 2 of the instant application, and Examples 1, 5, 6, 7 and 8 of Dalton US '164).

In **Exhibit Figure 2 of Declaration I**, it is shown that Examples of the present invention (Examples 1, 3, 7, 8, 9a, 9b and 10a), have a distinct high thermal resistance Tg (°C), at a change of viscosity ( $\eta_{sp}/c$ ), which is not possessed by either Comparative Example 5 (which is equivalent to the Braat US '327 reference), or Comparative Examples 1 and 2 of the instant application. More particularly Exhibit Figure 2 shows the present invention ( $\blacktriangle$  and  $\blacksquare$ ) has a higher thermal resistance (Tg) than Braat US '327 ( $\square$ ), at the same viscosity.

In **Exhibit Figure 3 of Declaration I**, there are shown the dielectric constants. In Exhibit Figure 3, it is shown that the present invention ( $\blacktriangle$  and  $\blacksquare$ ) has better results than Comparative Example 5 of the present specification (which is equivalent to the Braat US '327 reference ( $\square$ )) at the same viscosity ( $\eta_{sp}/c$ ).

Accordingly, the comparative test results provided in **Exhibit Figures 1-3** and the facts of distinction set forth above, evidence that the PPE of the present invention as recited in the

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pending claims is both patentably distinct from and additionally non-obvious to those of ordinary skill in the art upon considering the disclosures of the cited art of record.

This conclusion is based on the fact that none of the cited references (*i.e.*, Braat US '327 (US 6,211,327), WO '273 (WO 00/46273) or Dalton et al. US '164 (US 4,463,164)) provide any teaching or disclosure that would allow one to arrive at the instant inventive PPE as presently claimed, which possesses unexpected and advantageous properties not possessed by products of the cited art applied by the USPTO in rejecting the pending claims.

Accordingly, it is submitted that the present invention has unexpected results associated therewith.

Claims 27 and 28 (Product-by-Process)

Each of claims 27 and 28 is a product-by-process claim, which recites both features of the products and the processes of the present invention. Enclosed **Declaration II** of Mr. Akira Mitsui supports the patentability of each of pending product-by-process claims 27-28, so that a review of the same by the Examiner is respectfully requested at present.

Particularly, Mr. Akira Mitsui's **Declaration II** is being submitted herewith in support of the patentability of claims 27-28, because MPEP § 2113 clearly states that:

*"[t]he structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product."*  
(Emphasis Added).

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In claim 27, the process limitations of method claim 16 (which contains a solution method step) are recited therein.

As mentioned below, the molecular weight distribution of a precipitated PPE (*final product*) depends on a temperature of the precipitating step (*i.e., a recited process step*), that is, the process step temperature recited in claim method 16 (*and product-by-process claim 27*) is able to affect the structure of the final product.

As a result, it is submitted that the structure of the product of *product-by-process claim 27* is distinguishable from the teachings and disclosure of Dalton US'164 and WO '273, *even if arguendo*, similar compounds are taught/utilized in the cited art references being applied against claim 27 (and claim 28). This is clearly set forth in the enclosed 37 CFR § 1.132 **Declaration II**, which is submitted herewith.

Claim 16 recites, as step 1, "*polymerizing a phenol compound in the presence of a catalyst and oxygen-containing gas using a good solvent of said low molecular weight polyphenylene ether*" so as to obtain a polyphenylene ether solution.

At the end of this step, the obtained PPE has been dissolved in a solvent. The molecular weight of each PPE polymer chain would be expected to be varied, since its molecular weight is affected by the distribution of various conditions, such as temperature, concentration of catalyst or monomer, within a reactor. Therefore, the molecular weight distribution of the dissolved PPE would be expected to be relatively broad.

Further, method claim 16 recites, as step 2, "*precipitating a low molecular weight polyphenylene ether having a reduced viscosity ( $\eta_{sp}/c$ ), as measured at 30°C in a 0.5g/dl chloroform solution, of 0.04-0.18 dl/g by adding a poor solvent of said low molecular weight*

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*polyphenylene ether to said polyphenylene ether solution, wherein said precipitation is carried out at the temperature in the range of - 80 to 20 °C.”*

The desired low molecular weight PPE is precipitated by adding a poor solvent for the low molecular weight PPE to the solution of the PPE (dissolved PPE in the good solvent for the low molecular weight PPE). The addition of the selective poor solvent to the low molecular weight PPE solution is thought to attack or hinder interaction between the low molecular weight PPE and the good solvent in which it is dissolved, thereby causing a selective precipitation of the low molecular weight PPE from the solution obtained in the step 1 of the process (*i.e.*, the solvent method step of the process).

When the precipitation step 2 is carried out at a higher temperature than that recited in claim 16 and claim 27 (*such as* 30 °C), almost all the obtained PPE in the solution of the good solvent should be precipitated. Therefore, the molecular weight distribution of the precipitated PPE would be expected to be almost the same with that of the PPE dissolved in the good solvent (*i.e.*, being relatively broad). However, by adding the selective poor solvent and precipitating at a defined temperature range as recited in pending claims 16 and 27, the low molecular weight PPE is selectively precipitated out of the solution containing the good solvent (and having the addition of the poor solvent for the low molecular weight PPE).

Accordingly, as the molecular weight distribution of precipitated PPE (final product) is depends on the temperature of precipitating step in claim 16 and product-by-process claim 27 (*step 2 of the process*), it follows that the process steps set forth in product-by-process claim 27 “ would be expected to affect the structure of the final product”.



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In such a circumstance, MPEP § 2113 clearly sets forth that “process steps *should be considered... where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product.*”

Therefore, the product recited in product-by-process claim 27 is distinguished from cited references, and the process steps recited in claim 27 must be given consideration and weight by the USPTO under the provisions of MPEP § 2113.

Therefore, the product recited in claim 27 is distinguished from cited references being applied by the USPTO.

Regarding *product-by-process* claim 28, in this claim, all limitations of the process of claim 20 (*allowable precipitation method claim*) are recited.

In the course of polymerization, PPE is precipitated when its molecular weight increases to a molecular weight wherein a polymer cannot remain dissolved. The molecular weight of the precipitating PPE depends on the kind of solvent utilized. The specific range of molecular weight distribution of PPE (*final product*) can be obtained by using a mixture of at least two alcohols as a solvent (*in the process*). Thus, the process recited in claim 28 affects the structure of the final product.

Therefore, the product recited in product-by-process claim 28 is also distinguished from cited references, and the process steps recited in claim 28 must be given consideration and weight by the USPTO under the provisions of MPEP § 2113.

Accordingly, each of product-by-process claims 27 and 28 is patentable over the cited references of record.

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**CONCLUSION**

Based upon the remarks presented herein, and the submission of the two 37 CFR S 1.132 Declarations of Mr. Akira Mitsui submitted herewith, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of the pending claims 1-32 are allowed under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: September 29, 2006

Respectfully submitted,

By 

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Attachments: 37 CFR § 1.132 Declaration I of Mr. Akira Mitsui, and  
37 CFR § 1.132 Declaration II of Mr. Akira Mitsui.